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**XI-XII SCIENCE**

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NEET 2021

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AIR EWS 45

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VAIDEHI T.

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AIR : All India Rank

**22**

STUDENTS  
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**500**



**NIKITA M.**

**651**

LTMMC, MUMBAI



**CHIRAG P.**

**625**

TNMC, MUMBAI



**YASH S.**

**625**

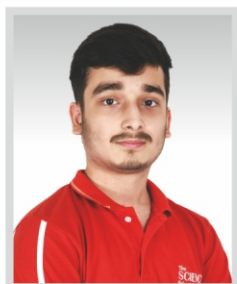
GMC, MUMBAI



**CHIRAG D.**

**624**

TNMC, MUMBAI



**AKSHAT K.**

**604**

GMC, NAGPUR



**NIKITA P.**

**598**

IGMC, NAGPUR



**KATHA M.**

**593**

GMC, ALIBAUG



**AKSHIT P.**

**584**

GMC, KOLHAPUR



**SIYA M.**

**580**

GMC, DHULE



**ANURADHA S.**

**579**

GMC, AKOLA



**SAHER S.**

**573**

GMC, CHANDRAPUR



**CHINTAN T.**

**572**

GMC, YAVATMAL



**MAHEK B.**

**570**



**DEECHA P.**

**559**

GMC, GONDIA



S6

# NEET 2022

## Biology\_(Zoology)

### Section – A (Compulsory)

151. In an E.coli strain i gene gets mutated and its product can not bind the inducer molecule. If growth medium is provided with lactose, what will be the outcome?

- (1) z, y, a genes will not be translated
- (2) RNA polymerase will bind the promoter region
- (3) Only z gene will get transcribed
- (4) z, y, a genes will be transcribed

152. In gene therapy of Adenosine Deaminase (ADA) deficiency, the patient requires periodic infusion of genetically engineered lymphocytes because:

- (1) Lymphocytes from patient's blood are grown in culture, outside the body.
- (2) Genetically engineered lymphocytes are not immortal cells.
- (3) Retroviral vector is introduced into these lymphocytes.
- (4) Gene isolated from marrow cells producing ADA is introduced into cells at embryonic stages

153. Given below are two statements: one is labelled as

Assertion (1) and the other is labelled as Reason (R).

Assertion (1):

Osteoporosis is characterised by decreased bone mass and increased chances of fractures. Reason (R):

Common cause of osteoporosis is increased levels of estrogen.

In the light of the above statements, choose the most appropriate Ans from the options given below:

- (1) (1) is correct but (R) is not correct
- (2) (1) is not correct but (R) is correct
- (3) Both (1) and (R) are correct and (R) is the correct explanation of (1)
- (4) Both (1) and (R) are correct but (R) is not the correct explanation of (1)

154. Which of the following statements are true for spermatogenesis but do not hold true for Oogenesis?

- (a) It results in the formation of haploid gametes
- (b) Differentiation of gamete occurs after the completion of meiosis
- (c) Meiosis occurs continuously in a mitotically dividing stem cell population
- (d) It is controlled by the Luteinising hormone (LH) and Follicle Stimulating Hormone (FSH) secreted by the anterior pituitary
- (e) It is initiated at puberty

Choose the most appropriate Ans from the options given below :

- (1) (b), (d) and (e) only
- (2) (b), (c) and (e) only
- (3) (c) and (e) only
- (4) (b) and (c) only

155. Which of the following is not a connective tissue?

- (1) Cartilage
- (2) Neuroglia
- (3) Blood
- (4) Adipose tissue

**156. Given below are two statements:**

Statement I:

Mycoplasma can pass through less than 1 micron filter size.

Statement II:

Mycoplasma are bacteria with cell wall In the light of the above statements, choose the most appropriate Ans from the options given below:

- (1) **Statement I is correct but Statement II is incorrect**
- (2) Statement I is incorrect but Statement II is correct
- (3) Both Statement I and Statement II are correct
- (4) Both Statement I and Statement II are incorrect

**157. Which of the following is present between the adjacent bones of the vertebral column?**

- (1) Areolar tissue
- (2) Smooth muscle
- (3) Intercalated discs
- (4) **Cartilage**

**158. In-situ conservation refers to:**

- (1) Conserve only endangered species
- (2) Conserve only extinct species
- (3) **Protect and conserve the whole ecosystem**
- (4) Conserve only high risk species

**159. Identify the asexual reproductive structure associated with Penicillium:**

- (1) Gemmules
- (2) Buds
- (3) Zoospores
- (4) **Conidia**

**160. If '8' Drosophila in a laboratory population of '80' died during a week, the death rate in the population is \_\_\_\_\_ individuals per Drosophila per week.**

- (1) 1.0
- (2) zero
- (3) **0.1**
- (4) 10

**161. Given below are two statements:**

**Statement I:**

**Restriction endonucleases recognise specific sequence to cut DNA known as palindromic nucleotide sequence.**

**Statement II:**

**Restriction endonucleases cut the DNA strand a little away from the centre of the palindromic site**

**In the light of the above statements, choose the most appropriate Ans from the options given below:**

- (1) Statement I is correct but Statement II is incorrect
- (2) Statement I is incorrect but Statement II is correct
- (3) **Both Statement I and Statement II are correct**
- (4) Both Statement I and Statement II are incorrect

**162. Which of the following functions is not performed by secretions from salivary glands?**

- (1) Lubrication of oral cavity
- (2) **Digestion of disaccharides**
- (3) Control bacterial population in mouth
- (4) Digestion of complex carbohydrates

**163. Detritivores breakdown detritus into smaller particles. This process is called:**

- (1) Humification
- (2) Decomposition
- (3) Catabolism
- (4) **Fragmentation**

**164. Which of the following is a correct match for disease and its symptoms?**

- (1) Myasthenia gravis - Genetic disorder resulting in weakening and paralysis of skeletal muscle
- (2) Muscular dystrophy An auto immune disorder causing progressive degeneration of skeletal muscle
- (3) **Arthritis - Inflamed joints**
- (4) Tetany - high  $\text{Ca}^{2+}$  level causing rapid spasms.

**165. Tegmina in cockroach, arises from:**

- (1) Metathorax
- (2) Prothorax and Mesothorax
- (3) Prothorax
- (4) **Mesothorax**

**166. Which of the following is not the function of conducting part of respiratory system?**

- (1) Temperature of inhaled air is brought to body temperature
- (2) **Provides surface for diffusion of  $\text{O}_2$  and  $\text{CO}_2$**
- (3) It clears inhaled air from foreign particles
- (4) Inhaled air is humidified

**167. Natural selection where more individuals acquire specific character value other than the mean character value, leads to:**

- (1) Disruptive change
- (2) Random change
- (3) Stabilising change
- (4) **Directional change**

**168. If the length of a DNA molecule is 1.1 metres, what will be the approximate number of base pairs?**

- (1)  $3.3 \times 10^6$  bp
- (2)  $6.6 \times 10^6$  bp
- (3)  **$3.3 \times 10^9$  bp**
- (4)  $6.6 \times 10^9$  bp

**169. Given below are two statements:**

**Statement I:**

**Fatty acids and glycerols cannot be absorbed into the blood.**

**Statement II:**

**Specialized lymphatic capillaries called lacteals carry chylomicrons into lymphatic vessels and ultimately into the blood.**

**In the light of the above statements, choose the most appropriate Ans from the options given below:**

- (1) Statement I is correct but Statement II is incorrect
- (2) Statement I is incorrect but Statement II is correct
- (3) **Both Statement I and Statement II are correct**
- (4) Both Statement I and Statement II are incorrect

**170. Which of the following statements with respect to Endoplasmic Reticulum is incorrect?**

- (1) **In prokaryotes only RER are present**
- (2) SER are the sites for lipid synthesis
- (3) RER has ribosomes attached to ER
- (4) SER is devoid of ribosomes

**171. In the taxonomic categories which hierarchial arrangement in ascending order is correct in case of animals**

- (1) Kingdom, Order, Class, Phylum, Family, Genus, Species
- (2) Kingdom, Order, Phylum, Class, Family, Genus, Species
- (3) **Kingdom, Phylum, Class, Order, Family, Genus, Species**
- (4) Kingdom, Class, Phylum, Family, Order, Genus, Species

172. A dehydration reaction links two glucose molecules to produce maltose. If the formula for glucose is  $C_6H_{12}O_6$  then what is the formula for maltose?

- (1)  $C_{12}H_{22}O_{11}$  (2)  $C_{12}H_{24}O_{11}$   
(3)  $C_{12}H_{20}O_{10}$  (4)  $C_{12}H_{24}O_{12}$

173. Identify the microorganism which is responsible for the production of an immunosuppressive molecule cyclosporin A

- (1) *Aspergillus niger*  
(2) *Streptococcus cerevisiae*  
(3) *Trichoderma polysporum*  
(4) *Clostridium butylicum*

174. Given below are two statements: one is labelled as

Assertion (A) and the other is labelled as Reason (R).

Assertion (A):

All vertebrates are chordates but all chordates are not vertebrates.

Reason (R):

Notochord is replaced by vertebral column in the adult vertebrates.

In the light of the above statements, choose the most appropriate Ans from the options given below.

- (1) (A) is correct but (R) is not correct  
(2) (A) is not correct but (R) is correct  
(3) Both (A) and (R) are correct and (R) is the correct explanation of (A)  
(4) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

175. In which of the following animals, digestive tract has additional chambers like crop and gizzard?

- (1) *Catla*, *Columba*, *Crocodilus*  
(2) *Pavo*, *Psittacula*, *Corvus*  
(3) *Corvus*, *Columba*, *Chameleon*  
(4) *Bufo*, *Balaenoptera*, *Bangarus*

176. Regarding Meiosis, which of the statements is incorrect?

- (1) Pairing of homologous chromosomes and recombination occurs in Meiosis-I  
(2) Four haploid cells are formed at the end of Meiosis-II  
(3) There are two stages in Meiosis, Meiosis-I and II  
(4) DNA replication occurs in S phase of Meiosis-II

177. Lippe's loop is a type of contraceptive used as:

- (1) Non-Medicated IUD  
(2) Copper releasing IUD  
(3) Cervical barrier  
(4) Vault barrier

178. Nitrogenous waste is excreted in the form of pellet or paste by:

- (1) Hippocampus  
(2) *Pavo*  
(3) *Ornithorhynchus*  
(4) *Salamandra*

179. Given below are two statements:

Statement I:

The release of sperms into the seminiferous tubules is called spermiation.

Statement II:

Spermiogenesis is the process of formation of sperms from spermatogonia.

In the light of the above statements, choose the most appropriate Ans from the options given below:

- (1) Statement I is correct but Statement II is incorrect  
(2) Statement I is incorrect but Statement II is correct

- (3) Both Statement I and Statement II are correct
- (4) Both Statement I and Statement II are incorrect

**180. Breeding crops with higher levels of vitamins and minerals or higher proteins and healthier fats is called:**

- (1) **Bio-fortification**
- (2) Bio-accumulation
- (3) Bio-magnification
- (4) Bio-remediation

**181. At which stage of life the oogenesis process is initiated?**

- (1) Birth
- (2) Adult
- (3) Puberty
- (4) **Embryonic development stage**

**182. Under normal physiological conditions in human being every 100 ml of oxygenated blood can deliver ml of O<sub>2</sub> to the tissues.**

- (1) 4 ml                      (2) 10 ml
- (3) 2 ml                    (4) **5 ml**

**183. Given below are two statements:**

**Statement I:** Autoimmune disorder is a condition where body defense mechanism recognizes its own cells as foreign bodies.

**Statement II:** Rheumatoid arthritis is a condition where body does not attack self cells.

**In the light of the above statements, choose the most appropriate Ans from the options given below:**

- (1) **Statement I is correct but Statement II is incorrect**
- (2) Statement I is incorrect but Statement II is correct

- (3) Both Statement I and Statement II are incorrect
- (4) Both Statement I and Statement II are correct

**184. Given below are two statements**

**Statement I:**

**The coagulum is formed of network of threads called thrombins.**

**Statement II:**

**Spleen is the graveyard of erythrocytes  
In the light of the above statements, choose most appropriate Ans from the options given below:**

- (1) Statement I is correct but Statement II is incorrect
- (2) **Statement I is incorrect but Statement II is correct**
- (3) Both Statement I and Statement II are correct
- (4) Both Statement I and Statement II are incorrect

**185. Select the incorrect statement with reference to mitosis:**

- (1) Chromosomes decondense at telophase.
- (2) Splitting of centromere occurs at anaphase.
- (3) All the chromosomes lie at the equator at metaphase.
- (4) **Spindle fibres attach to centromere of chromosomes**



**Section – B (Attempt Any 10)**

**186. Match List-I with List-II.**

	List - I		List - II
A	Bronchioles	i.	Dense Regular Connective Tissue
B	Goblet cell	ii.	Loose Connective Tissue
C	Tendons	iii.	Glandular Tissue
D	Adipose Tissue	iv.	Ciliated Epithelium

Choose the correct Ans from the options given below:

- (1) (A)-(ii), (B)-(i), (C)-(iv), (D)-(iii)
- (2) (A)-(iii), (B)-(iv), (C) - (ii), (D) - (i)
- (3) (A)-(iv), (B)-(iii), (C)-(i), (D)-(ii)
- (4) (A)-(i), (B)-(ii), (C)-(iii), (D)-(iv)

**187. Match List-I with List-II.**

	List - I (Biological Molecules)		List - II (Biological functions)
A	Glycogen	i.	Hormone
B	Globulin	ii.	Biocatalyst
C	Steroids	iii.	Antibody
D	Thrombin	iv.	Storage product

Choose the correct Ans from the options given below :

- (1) (A)-(ii), (B)-(iv), (C) - (iii), (D)-(i)
- (2) (A)-(iv), (B) - (iii), (C) - (i), (D)-(ii)
- (3) (A)-(iii), (B)-(ii), (C) - (iv), (D)-(i)
- (4) (A)-(iv), (B)-(ii), (C) - (i), (D) - (iii)

**188. Which of the following is a correct statement?**

- (1) Slime moulds are saprophytic organisms classified under Kingdom Monera.
- (2) Mycoplasma have DNA, Ribosome and cell wall
- (3) Cyanobacteria are a group of autotrophic organisms classified under Kingdom Monera.
- (4) Bacteria are exclusively heterotrophic organisms.

**189. Which one of the following statements is correct?**

- (1) Blood moves freely from atrium to the ventricle during joint diastole
- (2) Increased ventricular pressure causes closing of the semilunar valves.
- (3) The atrio-ventricular node (AVN) generates an action potential to stimulate atrial contraction
- (4) The tricuspid and the bicuspid valves open due to the pressure exerted by the simultaneous contraction of the atria

**190. Select the incorrect statement regarding synapses**

- (1) Chemical synapses use neurotransmitters
- (2) Impulse transmission across a chemical synapse is always faster than that across an electrical synapse.
- (3) The membranes of presynaptic and postsynaptic neurons are in close proximity in an electrical synapse.
- (4) Electrical current can flow directly from one neuron into the other across the electrical synapse.

191. Given below are two statements:

**Statement I:**

In a scrubber the exhaust from the thermal plant is passed through the electric wires to charge the dust particles :

**Statement II:**

Particulate matter (PM 2.5) can not be removed by scrubber but can be removed by an electrostatic precipitator.

In the light of the above statements, choose the most appropriate Ans from the options given below:

- (1) Statement I is correct but Statement II is incorrect
- (2) Statement I is incorrect but Statement II is
- (3) Both Statement I and Statement II are correct
- (4) Both Statement I and Statement II are incorrect

192. Which of the following are not the effects of Parathyroid hormone?

- (a) Stimulates the process of bone resorption
- (b) Decreases  $\text{Ca}^{2+}$  level in blood
- (c) Reabsorption of  $\text{Ca}^{2+}$  by renal tubules
- (d) Decreases the absorption of  $\text{Ca}^{2+}$  from digested food
- (e) Increases metabolism of carbohydrates

Choose the most appropriate Ans from the options given below :

- (1) (a) and (e) only
- (2) (b) and (c) only
- (3) (a) and (c) only
- (4) (b), (d) and (e) only

193. Which of the following is not a desirable feature of a cloning vector?

- (1) Presence of single restriction enzyme site
- (2) Presence of two or more recognition
- (3) Presence of origin of replication
- (4) Presence of a marker gene

194. Select the incorrect statement with respect to acquired immunity.

- (1) Anamnestic response is due to memory of first encounter
- (2) Acquired immunity is non-specific type of defense present at the time of birth
- (3) Primary response is produced when our body encounters a pathogen for the first time.
- (4) Anamnestic response is elicited on subsequent encounters with the same pathogen.

195. The recombination frequency between the genes a & c is 5%, b & c is 15%, b & d is 9%, a & b is 20%, c & d is 24% and a & d is 29%. What will be the sequence of these genes on a linear chromosome?

- (1) a, b, c, d
- (2) a, c, b, d
- (3) a, d, b, c
- (4) d, b, a, c

196. Ten E.coli cells with  $^{15}\text{N}$ -dsDNA are incubated in medium containing  $^{14}\text{N}$  nucleotide. After 60 minutes, how many E.coli cells will have DNA totally free from  $^{15}\text{N}$ ?

- (1) 60 cells
- (2) 80 cells
- (3) 20 cells
- (4) 40 cells

**197. Match List-I with List-II with respect to methods of Contraception and their respective actions.**

	List - I		List - II
A	Diaphragms	i.	Inhibit ovulation and Implantation
B	Contraceptive pills	ii.	Increase phagocytosis of sperm within Uterus
C	Intra Uterine Devices	iii.	Absence of Menstrual cycle and ovulation following parturition
D	Lactational Amenorrhea	iv.	They cover the cervix blocking the entry of sperms

Choose the correct Ans from the options given below:

- (1) (A)-(ii), (B) - (iv), (C)-(i), (D)-(iii)
- (2) (A)-(iii), (B)-(ii), (C)-(i), (D)-(iv)
- (3) (A)-(iv), (B)-(i), (C)-(iii), (D)-(i)
- (4) **(A)-(iv), (B)-(i), (C) - (i), (D)-(ii)**

**198. Which of the following statements is not true?**

- (1) Homology indicates common ancestry
- (2) **Flippers of penguins and dolphins are a pair of homologous organs**
- (3) Analogous structures are a result of convergent evolution
- (4) Sweet potato and potato is an example of analogy

**199. Statements related to human Insulin are given below. Which statement(s) is/are correct about genetically engineered Insulin?**

- (a) Pro-hormone insulin contain extra stretch of C-peptide
- (b) A-peptide and B-peptide chains of insulin were produced separately in E.coli, extracted and combined by creating disulphide bond between them.
- (c) Insulin used for treating Diabetes was extracted from Cattles and Pigs.
- (d) Pro-hormone Insulin needs to be processed for converting into a mature and functional hormone.
- (e) Some patients develop allergic reactions to the foreign insulin.

Choose the most appropriate Ans from the

**options given below:**

- (1) (c) and (d) only
- (2) (c), (d) and (e) only
- (3) (a), (b) and (d) only
- (4) **(b) only**

**200. If a colour blind female marries a man whose mother was also colour blind, what are the chances of her progeny having colour blindness?**

- (1) 71%
- (2) **100%**
- (3) 25%
- (4) 50%